

## **An Analysis of the Coverage of Astronomy News in South African Newspapers**

The 21<sup>st</sup> century is close to two-decades-old and there is a growing concern that South African media needs to improve their science news coverage to conscientise citizens with scientific literacy i.e. their knowledge about science, and the environment. This will assist in developing active citizens in a world that is dominated by complicated scientific and technological advances. The concern about how the media in particular newspapers portray science news is growing, since there is a belief that newspapers can play a pivotal role in educating the citizens. Newspapers can play a role when teaching science are regarded as a medium that can heighten students' knowledge, enhance vocabulary skills and encourage a positive attitude towards learning. The aim of this study was to provide an overview of how online newspapers portray astronomy news in terms of framing and tone. The study is underpinned by framing theory, which suggests that presentation can influence the choices people make. A mixed method approach was employed since it combines both qualitative and quantitative methods to deal with different questions of the study. An instrument to collect data was not required, the data was available on the internet. I retrieved the newspapers from the internet and samples were drawn from two online newspapers, the Mail & Guardian and News24 from 1 January 2012 to 31 July 2015. The Nisbet framework and a modified story analysis form were used to analyse data. The quantitative results indicates that the coverage of astronomy news is still very limited in South Africa media based on the newspapers analysed. The finding shows that 82% of the analysed Mail & Guardian newspapers were general news, whereas only 76% of News24 stories were general news.

**Key words: Astronomy Education, Online newspaper, Framing Theory**

### **Extended abstract**

Newspapers around the world, including South Africa, are overwhelmed with politics, fashion, celebrity news and other things that are not science related (Van Rooyen, 2002). Science and technology have very little news coverage in South African media. Less than 2% of editorial space in South Africa's top publications was devoted to science topics, a lack of communication between journalists, scientists and the society might be a possible reason for this (Van Rooyen, 2002).

The aims of the study was to provide an overview of how online newspapers portray astronomy news in terms of framing and tone. To realise the aim of the study, the following research question was set:

- i. How much coverage does astronomy news receive in selected South African online newspapers?

The appropriate theoretical framework used was framing theory. Goffman refers to framing theory as "a scheme of interpretation, that enables individuals to locate, perceives, identify, and label occurrences or life experiences. Framing is used to represent the communication aspect which leads to the people's preference by accepting one meaning to another" (Goffman, 1974, in Cissel, 2012, p. 68) and it suggests the way news is presented can influence the audience reactions.

A quantitative approach was employed to deal with the questions of the study. A data-collecting instrument was not used since the data was available on the internet. I retrieved forty newspaper articles from the two leading online newspapers in South Africa, the Mail & Guardian, and News24. Twenty-newspaper article from each newspaper dating from 1 January 2012 to 31 July 2015. When retrieving newspaper I had to read the headlines of each newspaper article to make sure it was relevant to astronomy news. To search for the newspapers I used the term “astronomy” or “SKA”. To analyse data I adapted a modified story analysis form by (Lynch & Peer, 2002). This tool is used in the newspaper content analysis. Within the story analysis form, there are categories and sub-categories which include origin, geographic focus and treatment, the Nisbet framework, framing techniques, article ID, date, article title and general reactions, among others.

## Results and discussions

### i. News treatment

News treatment is a different ways a story written. It has four sub-categories as shown in Table 1 below.

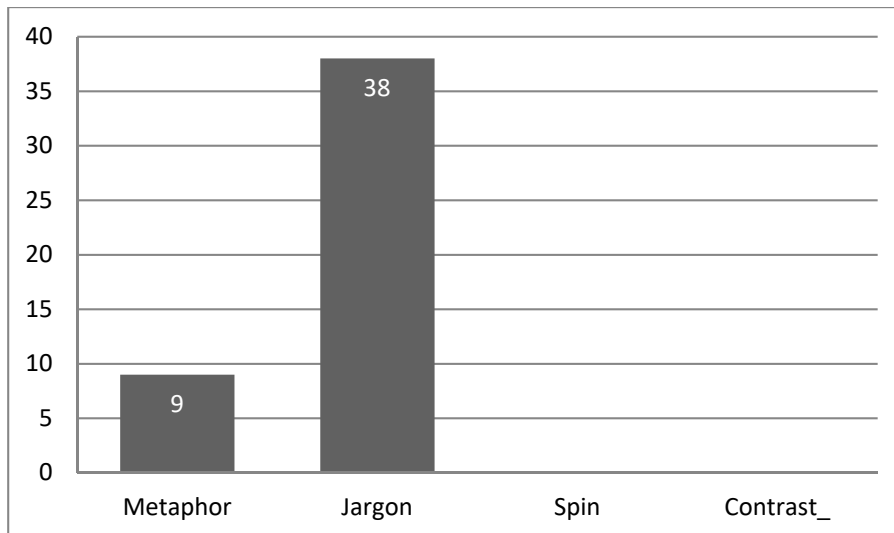
Sub-categories	Definition
General News	Is any piece of an article that stresses evidences of a recent event that is regularly straight news?
Features	A long story with more reflective tone, and usually it is a serious subject nonetheless attempts to tell a story more accurately than repeating a chain of proofs.
Commentary/criticism	Is any piece of an article that presents first-person views or newspapers editorials views?
Unknown	It is not stated.

**Figure 1: A table of news treatment definition and sub-categories**

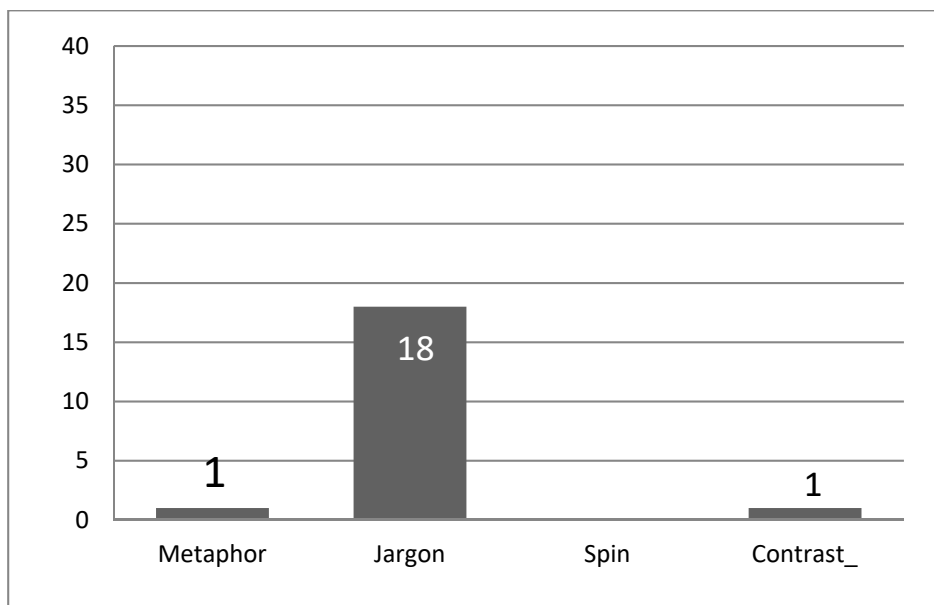
The finding shows that 82% of the analysed Mail & Guardian newspapers were general news, whereas only 76% of News24 stories were general news. Journalists covered these stories because were perceived as newsworthy or they were politically. The *Mail & Guardian* reported about astronomy news when there was a new advance related to the Square Kilometre Array (SKA) project.

### ii. Framing techniques

Fairhurst and Sarr (1996) explain that framing techniques that are most likely to be used when conducting a newspaper content analysis are: metaphors, spin, slogans, jargon and contrast. Figures 2 and 3 show the number of framing techniques used by each newspaper.



**Figure 1: The Mail & Guardian framing techniques**



**Figure 2: News24 framing techniques**

Figures 1 and 2 above indicate that both newspapers are overwhelmed with science jargon, 81% of the analysed text/stories from the Mail & Guardian contained jargon whereas 90% from News24 science jargon and abbreviations which were not explained. Terms such as 'light year' and 'AU' were not explained or written in full in most of the papers. The Mail & Guardian newspaper's journalists are the ones who are writing or covering the science stories, while News24 take the stories from their freelance or buy the story from other newspapers. Mail & Guardian report about science news that are not in line with school science as it was dominated by SKA project news while News24 covers science news on subjects that are taught in school especially cosmology.

## Discussion and Conclusion

South African education system encourages teachers to use resources that could bring life to the classroom and newspapers are a good resource to use if they are used correctly and they have accurate information. Newspaper activities engage students in interesting and enjoyable learning and encourage learners to read further during their leisure time as newspapers store a vast amount of information (Laureta, 2009). There are various ways teachers can create an active classroom when newspapers are incorporated in the classroom (Laureta, 2009). Popular scientists were/are still finding fault with the accuracy of scientific information provided by the media in general. This is one of the reasons some science teachers are still reluctant to use newspapers in their classrooms. Teachers can use newspapers as long they are supplement with textbooks and other teaching materials. The use of newspapers in the teaching and learning of science is undoubtedly one of the effective ways of teaching science whether in an informal or formal learning and teaching context. Using newspapers increases students' knowledge, and improves students' vocabulary skills to enhance conceptual understanding. The study is in line with the theme of the conference, in particular to talk about *future* educational challenges from science and technology perspectives, and to make relevance for contemporary science education research such as the use of online newspapers.

## Reference

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## Appendix A: An example of a modified Story analysis form used in content analysis

### Story Analysis Form

Article ID \_\_\_\_\_

Date \_\_\_\_\_

Article title: \_\_\_\_\_  
\_\_\_\_\_

Total number of words \_\_\_\_\_

Origin

Geographic focus:

News Service \_\_\_\_\_

National \_\_\_\_\_

Newspaper journalist \_\_\_\_\_

International \_\_\_\_\_

Unknown \_\_\_\_\_

Unspecified

Treatment:

Nisbet Frame code (2009) used

General news \_\_\_\_\_

Feature \_\_\_\_\_

4.1 Nisbet Sub frame code

Commentary or criticism \_\_\_\_\_

Other \_\_\_\_\_

Photos & Graphics

# of Graphics \_\_\_\_\_

# of Photographs \_\_\_\_\_

General Reaction:

How clear and understandable was the writing?

(1 = negative.....10 = positive)

1 2 3 4 5 6 7 8 9 10

How interesting was the story?

1 2 3 4 5 6 7 8 9 10

Is this a story you would *choose* to read or use as  
a class activity/assessment?

1 2 3 4 5 6 7 8 9 10

### **Use of Fairhurst and Sarr (1996) Framing Techniques**

Metaphor \_\_\_\_\_

Slogans \_\_\_\_\_

Jargon \_\_\_\_\_

Catchphrases \_\_\_\_\_